

ABSTRACT OF THE DISCLOSURE

1
2 A radio link control (RLC) entity (200) supports plural TCP connections across a
3 radio interface and is employed with or in a radio access network. The radio link
4 control (RLC) entity processes RLC protocol data units (PDUs) obtained from a
5 medium access control (MAC) layer to obtain Internet Protocol (IP) packets for the
6 plural TCP connections. The radio link control (RLC) entity uses availability of
7 Internet Protocol (IP) packets for a given TCP connection to control separately for the
8 given TCP connection in-sequence delivery to an Internet Protocol layer of Internet
9 Protocol (IP) packets without regard to availability of Internet Protocol (IP) packets of
10 another of the plural TCP connections. The radio link control (RLC) entity has both a
11 sending side (which sends RLC PDUs to the lower level medium access control (MAC)
12 layer) and a receiving side (which receives RLC PDUs from the lower level medium
13 access control (MAC) layer). To control in-sequence delivery of the Internet Protocol
14 (IP) packets for the given TCP connection, the radio link control (RLC) entity inserts
15 and uses port-specific sequence numbers in the RLC protocol data units which carry the
16 Internet Protocol (IP) packets for the given TCP connection. The port-specific
17 sequence numbers for the RLC protocol data units are assigned on a sending side of the
18 radio link control (RLC) entity. The port-specific sequence numbers are carried in an
19 extension of a length indicator field of a header of the RLC protocol data units. A
20 predetermined value in a header extension type field of the header of the RLC protocol
21 data units indicates that the port-specific sequence numbers are carried in an extension
22 of a length indicator field of the header of the RLC protocol data units.